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assessments: subjective of QoL and objective -of pts repositioning during RT.

Material and Methods: 57 pts(28 gynecological caner females and 29 prostatic cancer males) underwent radical RT to the pelvic area in Radiation Therapy Department of Contemporary Cancer Center in Bialystok, Poland. Pts were immobilized with an AIO SOLUTION by OrfitTM set or kneefix plus headrest. Demographic questionnairesone was filled once. Second questionaire using VAS scale evaluated subjective sensation of anxiety via 20 questions describing events influencing areas: biological social, psychological and somatic. It was filled 3 times: before: localization CT, 1st and 11th fraction (fr) of RT. Heart rate (indicating objective pts anxiety) examination was performed before each evaluation. Reproducibility of pts positioning in relation to X, Y, Z-axes was verified under Elekta accelerator using X-ray volume imaging (XVI).

Results: Most of pts exhibit highly increased anxiety before CT. It was decreasing in time but still was significant at the end of RT. Contrary to men, female pts experienced higher anxiety specially in somatic, and biological areas before CT. Males developed the sensation before 1st fr. In pts positioned with hands on their chest significantly worse Y-axis position reproducibility (PR) before 1st fr and significantly higher anxiety (p=0,007) was observed before 11th fr of RT (p=0,03) comparing to those localized with hands along the body. Higher psychological anxiety was associated with significantly worse average PR in all axes (p=0.03, R=0,3). Average heartbeat was highest before the 1st while lowest - before 11th fr of RT. Intensity of anxiety was not associated with social situation, experience with cancer among relatives, and the time between diagnosis and start of RT.

Conclusion: Since anxiety influences pts repositioning during RT, more attention should be paid by RTT to decrease this emotional satus of the pts.Educational events should be organized for RTT to help them overcome the problem of pts anxiety during RT.

EP-2100

Effectiveness of the manual correction during positioning patients with prostate cancer

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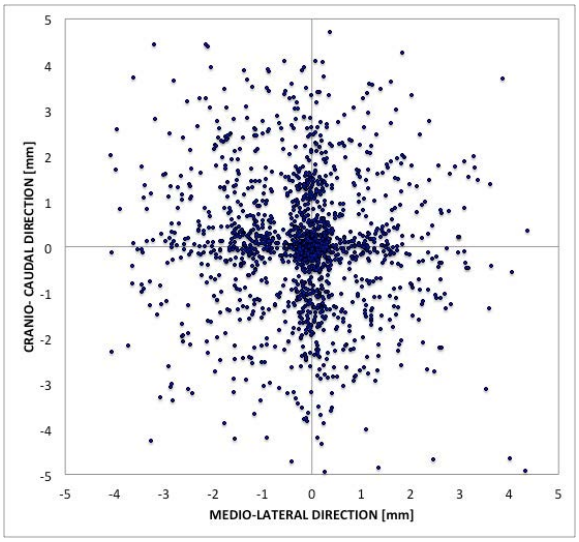
Purpose or Objective: Total shift (TS) in each of the directions along the x, y or z-axis is a sum of shifts resulting from automatic registration (AR) and manual correction (MC) and is described by formula: TS=AR+MC. Unfortunately, MC is burdened by error resulting from inter-observer variability.
The aim of this study was to find the level of MC, above which the use of MC during positioning of the patients with prostate cancer on the helical tomotherapy will be reasonable.

Material and Methods: This retrospective study based on the image guidance data gathered from 30 consecutive patients with prostate cancer treated on helical tomotherapy in 2013. The planned dose for each patient was 74 Gy delivered to the prostate or to the prostate and to the basis of the seminal vesicles. The treatment was realized in 37 fractions.
Daily MVCT imaging covered whole irradiated region expanded by 10 mm in cranio-caudal direction. The data from each fraction and for every patient (daily MVCT and planned kVCT) were re-registered by five independent observers.
The MCs established by observers were averaged for each fraction and for every patient, respectively. The level of MC, above which usage of MC is reasonable, was recognized on the level of averaged MC higher than 1 mm.

Results: 1110 registrations were re-registered by each observer.
Using the condition of the average MC higher than 1 mm, we established that the reasonable MC that should be applied during registrations are respectively: higher than 2 mm in medio-lateral and cranio-caudal directions; and higher than 2.5 mm in anterio-posterior direction.
Figure 1 shows averaged manual corrections in the medio-lateral and cranio-caudal directions.



Conclusion: Manual correction effectively increase the accuracy of the registrations when the value of the corrections are higher than 2 mm in medio-lateral and cranio-caudal directions and higher than 2.5 mm in anterio-posterior direction. Lower values of manual corrections are burdened by error resulting from inter-observer variability and can not be applied to the total shift during registration process.

Electronic Poster: RTT track: Other topics for RTTs

EP-2101

Inverting a teaching practice

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Purpose or Objective: Introduction: The first year radiation therapy (RT) planning paper in the Bachelor of Radiation Therapy, University of Otago, New Zealand covers all of the basic concepts required to be able to plan radiation treatments. As the students' progress through the three years of the programme the concepts remain the same but the application of them becomes more complex. Planning concepts were taught one by one, with the students gaining knowledge and comprehension on each concept. Towards the end of the paper the aim was to be able to apply, analyse and evaluate all of these concepts together to produce a radiation therapy plan. However, students were indicating that although they understood each of the concepts individually they struggled to apply them together and felt underprepared for the clinical placement – the acquisition of knowledge had not led to critical thinking.
Objectives: In response to this feedback major changes were instituted to the structure of the paper delivery by essentially reversing the approach. The students' now began by creating and critiquing plans then unpacking and exploring the concepts. The authors wanted to assess the impact this new approach had on the students in their clinical placement.

Material and Methods: Method: To assess the preparedness of the students for clinical placement a comparison of the original method of delivery (group A) to the new approach (group B) was undertaken. Six students from group A were invited to participate in a focus group using a semi-structured

interview technique with an independent interviewer. The focus group was conducted shortly after the completion of the first clinical placement. The themes that came from this were then used to create a survey for group B. This was also completed shortly after their first clinical placement. Additionally this survey was also undertaken by supervising qualified RTs from the clinical placements.

Results: Results: The results from the focus group A showed that the students did not fully grasp how the concepts applied to the final plan and this left them feeling very underprepared for their clinical placement and that this was reflected back to them by supervising qualified staff. Group B however, felt themselves to be much better prepared and reasonably confident to undertake clinical placement a view which was supported by the supervising radiation therapists.

Conclusion: Conclusion: The alteration of the teaching delivery had allowed the students to start the paper by thinking critically about a plan and then supporting this thinking with new knowledge. Although this was a very steep learning curve for the students at the beginning of the paper the final assessment and course evaluations also indicated that they had a much better overall grasp by the end.

EP-2102

"We're all here for the patient": exploring the process of interprofessional learning

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Purpose or Objective: This qualitative study aimed to explore student perceptions and experiences of the Interprofessional Education (IPE) programme focused on long-term condition management.**(1)** A secondary aim was to explore the experiences of radiation therapy students who recently joined the programme.

Material and Methods: Three focus groups were conducted. All 41 students who participated in the IPE programme (dietetics; n=4, medicine; n=18, physiotherapy; n=6, radiation therapy; n=13) were invited to attend one of the two interdisciplinary focus groups. Students from radiation therapy were also invited to attend a unidisciplinary focus group. Focus groups were audio-recorded and transcribed verbatim. Data were independently analysed by two researchers within the framework of Thematic Analysis.**(2)** Themes were determined following parallel coding and research team verification.

Results: Thirty-four students participated in the interprofessional focus groups and 13 radiation therapy students participated in their unidisciplinary focus group. Three key themes emerged related to i) learning ii) perceived long-term professional benefits and iii) the structure and content of the programme. An additional theme emerged from the radiation therapy focus group related to how they perceived, and considered they were perceived by, the medical students.

Conclusion: Participants considered the programme to be a valuable learning opportunity which had direct relevance to their clinical careers. Listening to the insights of students is an important means of discovering what, for them, constitutes a meaningful and positive learning experience. Providing students with an opportunity to learn about each other should be prioritised within IPE programmes in order to allow them to effectively learn with and from each other.

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EP-2103

Margin assessment for feline and canine radiotherapy using a custom cranial immobilisation device

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Purpose or Objective: The purpose of this study was to observe the daily positioning correction errors in feline and canine radiotherapy, using a custom cranial immobilization device and KV onboard imaging. Then further assess the data for margin definition in the event of an unguided approach (without the possibility of daily imaging) for treatment use with the identical positioning device.

Material and Methods: Canine and feline patients with cranial tumors were treated using a custom made cranial immobilization device, consisting of: a plastic plate which is fixed to the couch, a detachable custom molded bite block, and a custom fitted vacuum foam cushion supporting the neck, thorax and body. The patients were imaged daily before treatment, , thereby correcting all positioning errors in lateral, vertical and longitudinal directions. The shift values were then saved to a data base for later analysis.

Results: 8 patients (3 feline, 5 canine) and a total of 93 post-imaging corrections were observed in 3 directions (lateral, vertical, and longitudinal). Upon assessment of the data, the formula:
PTV Margin=2Σ + 0.7σ (van Herk et al.)
was used to calculate margin for the unguided approach. A result of 3mm x 2mm x 3mm (lateral, vertical, longitudinal) was found.

Conclusion: Based on the results, the margin of an unguided approach using the custom positioning system, would need to be extended from 2mm (margin used for image guided treatment planning) to 3mm in the lateral and longitudinal directions, while vertical would remain at 2mm.

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EP-2104

Waiting times for IMRT as a Quality Indicator: A study from a Tertiary Hospital in Saudi Arabia

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Purpose or Objective: To assess the compliance of our protocol of ≤ 10 working days (WD) for IMRT.

Material and Methods: A retrospective analysis of all cases treated between October 2010 and December 2014. Waiting